

### REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-5, 7-14, 16-21, and 23 are pending in this case. Claims 1, 7, 8, and 16 are amended and Claims 6, 15, and 22 are canceled, without prejudice or disclaimer, by the present amendment. The changes to the claims are supported in the originally-filed disclosure at least at Figures 1-3 and at page 10, line 21, to page 11, line 3. Thus, no new matter is added.

In the outstanding Office Action, Claims 1-23 were rejected under 35 U.S.C. § 102(e) as anticipated by Hashimoto (U.S. Patent No. 6,956,605).

Applicant respectfully traverses the rejection of the pending claims.

Amended Claim 1 is directed to a CMOS image sensor and includes:

a plurality of unit cells arranged in the row and column directions at predetermined pitches of  $ph_0$  and  $pv_0$  respectively in a two-dimensional plain forming a matrix, each of the unit cells including:

**a first and a second photoelectric conversion element, each of which corresponds to a pixel,**

a first and a second transfer transistor for transferring charges stored by the photoelectric conversion elements to their common floating junction,

a reset transistor for resetting the potential of the floating junction,

a driver transistor whose output potential is controlled by the potential of the floating junction, and

an address transistor for selectively driving the driver transistor;

reset drain voltage lines provided in the column direction of the matrix arrangement for resetting the potential of the common floating junctions included in the unit cell belonging to each column of the matrix arrangement;

first transfer lines provided in the row direction of the matrix arrangement for controlling the first transfer transistor included in the unit cell belonging to each row;

second transfer lines in the row direction of the matrix arrangement for controlling the second transfer transistors

included in the unit cells belonging to each row of the matrix arrangement;

signal output lines provided in the column direction of the matrix arrangement to which the output voltages of the driver transistors included in the unit cells belonging to each column of the matrix arrangement are supplied, and

address lines provided in the row direction of the matrix arrangement for selectively driving the driver transistors included in the unit cell belonging to each row, wherein

**the first and the second photoelectric conversion elements are spaced by  $ph0/2$  and  $pv0/2$  to each other** in the horizontal and vertical directions, thereby being arranged in an oblique direction in relation to the row or column directions of the matrix, and

the first and the second transfer transistors, the floating junction, the reset transistor, the driver transistor or the address transistor included in each of the unit cells are placed in areas surrounded by adjacent unit cells.

The outstanding Office Action asserts Hashimoto as teaching every element of Claim

1. Specifically, at page 2, the outstanding Office Action asserts photoelectric conversion portions  $a_{11}$  and  $a_{22}$  as teaching the first and second photoelectric conversion elements as defined by Claim 1.

However, photoelectric conversion portions  $a_{11}$  and  $a_{22}$  of Hashimoto do not teach or suggest “a first and a second photoelectric conversion element, **each of which corresponds to a pixel,**” as defined by amended Claim 1. As described at column 3, line 13, to column 4, line 48, of Hashimoto, the signals of photoelectric conversion portions  $a_{11}$  and  $a_{22}$  are added and input to one common amplifier connected to the corresponding vertical shift register  $V_0$  connected to four adjacent pixels. Thus, each of the photoelectric conversion portions  $a_{11}$  and  $a_{22}$  do not correspond to a pixel.

Further, Hashimoto does not teach or suggest “**the first and the second photoelectric conversion elements are spaced by  $ph0/2$  and  $pv0/2$  to each other** in the horizontal and vertical directions,” as recited by amended Claim 1, because Hashimoto does not provide a

description of the spacing of the photoelectric conversion portions  $a_{11}$  and  $a_{22}$  relative to predetermined pitches of unit cells.

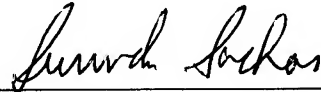
Because Hashimoto does not teach or suggest at least the above-discussed features of amended Claim 1, Applicant respectfully requests that the rejection under 35 U.S.C. § 102(e) of Claim 1 and Claims 2-7 and 17-23, which depend therefrom, be withdrawn.

Amended Claim 8, though differing in scope from Claim 1, patentably defines over Hashimoto for substantially the same reasons as Claim 1. Thus, Applicant respectfully requests that the rejection under 35 U.S.C § 102(e) of Claim 8 and Claims 9-16, which depend therefrom, be withdrawn.

Accordingly, the outstanding rejections are traversed and the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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